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| 10/786,947 | 02/25/2004 | Nikolaus H. Lehmann | MAT1-226US | 3784 |
| 23122 | 7590 | 04/17/2007 | EXAMINER | |
| RATNERPRESTIA | | | TRAN, KHAI | |
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| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/786,947

Applicant(s)

LEHMANN ET AL.

Examiner

KHAI TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-13,18,20,21 and 26 is/are rejected.
- 7) ☒ Claim(s) 8,14-17,19,22-25 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2 sheets.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 10 is objected to because of the following informalities:

Regarding claim 10, line 1, the term "summing circuits" should be changed to --
summing circuit--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6, 13, 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakache et al (US 2004/0156504 A1).

Regarding claim 1, Nakache et al disclose a method and apparatus for generating wideband signals for transmitting source data, the wideband signals including wideband signal and having reduced discrete power spectral density (PSD) components, the method comprising the steps of: pulse modulating the source data; repeating and time hopping pulses within the pulse modulated source data (Figure 9, see col. 6, lines 22-30); selectively inverting the polarity of the repeated time hopped

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pulses (see col. 6, lines 22-30); modulating the wideband signal pulse with the selectively inverted pulses (col. 4, lines 51-55).

Regarding claim 2, Nakache et al also disclose wherein the pulse modulating step comprising the steps of modulating the source data using at least one of (1) a pulse position modulation scheme and (2) a pulse amplitude modulation scheme (col. 5, lines 27-51).

Regarding claim 3, Nakache et al disclose a step of selectively inverting the polarity of the repeated and time hopped pulses response to a pseudo random number sequence (950).

Claims 4-5 are similar to claims 1 and 2. Therefore, claims 4-5 are rejected under a similar rationale.

Regarding claim 6, Nakache et al disclose the pulse shaping circuit is an ultra wideband (UWA) pulse shaping circuit (col. 4, lines 51-55).

Claim 13 is similar to claim 1. Therefore, claim 13 is rejected under a similar rationale.

Regarding claim 18, Nakache et al disclose a step of demodulating the wideband signal using a PPM demodulation scheme (col. 5, lines 27-51).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakache et al in view of Welborn et al (US 2003/0165184 A1).

Regarding claim 7, the limitations of the claim 7 illustrated above in paragraph 3. Nakache et al fail to explicitly disclose a step of summing corresponding repeated pulse within the received data signal after sampling and inverting.

Welborn et al disclose an adder (940 as shown in Figure 9) used to add the inverting and non-inverting outputs to provide an output pulse (see [0189]). It would have been obvious to one having ordinary skill in the art the time the invention was made to add the inverting and non-inverting outputs and transmit the output signal to a receiver as taught by Welborn et al into the teachings of Nakache et al.

Regarding claim 9, Welborn et al disclose a step of demodulating the summed pulse using a phase amplitude modulation (PAM) scheme (see [0152]).

Claim Rejections - 35 USC § 103

6. Claims 10-12, 20-21, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mo et al (US 2004/056504 A1) in view of Miller et al (U.S. Pat. 6,834,073).

Regarding claims 10-11, 20-21, Mo et al disclose a function circuit configured to map pulses of either polarity within the wideband signal to a single polarity to produce a pulse stream in which all pulses have the same polarity (see [0035] to [0036]). Nakache et al fail to disclose a filter configured to receive and discriminate the wideband signal having random inverted pulse.

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Miller et al disclose a filter (a matched filter 402) configured to receive and discriminate the wideband signal having random inverted pulse (col. 15, lines 41-59). It would have been obvious to one having ordinary skill in the art the time the invention was made to filter the detect the wideband signal by using a matched filter as taught by Miller et al into the teachings of Mo et al for recreating the wavelet stream generated at the transmitter and correlating the local UWB signal with the received UWB signal.

Regarding claim 26, Miller et al disclose wherein the wideband signal being pulse position modulation (PPM) (col. 6, lines 43-65) and wherein a demodulator for demodulating the wideband signal using a PPM demodulation scheme (see Fig. 3A(1), a receiver 11).

Claim 12 is similar to claim 2. Therefore, claim 12 is rejected under a similar rationale.

Allowable Subject Matter

7. Claims 8, 14-17, 19, 22-25, 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moore (U.S. Pat. 6,836,226) discloses an ultra-wideband pulse modulation system and method.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHAI TRAN whose telephone number is (571) 272-3019. The examiner can normally be reached on 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAY PATEL can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



KHAI TRAN
Primary Examiner
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